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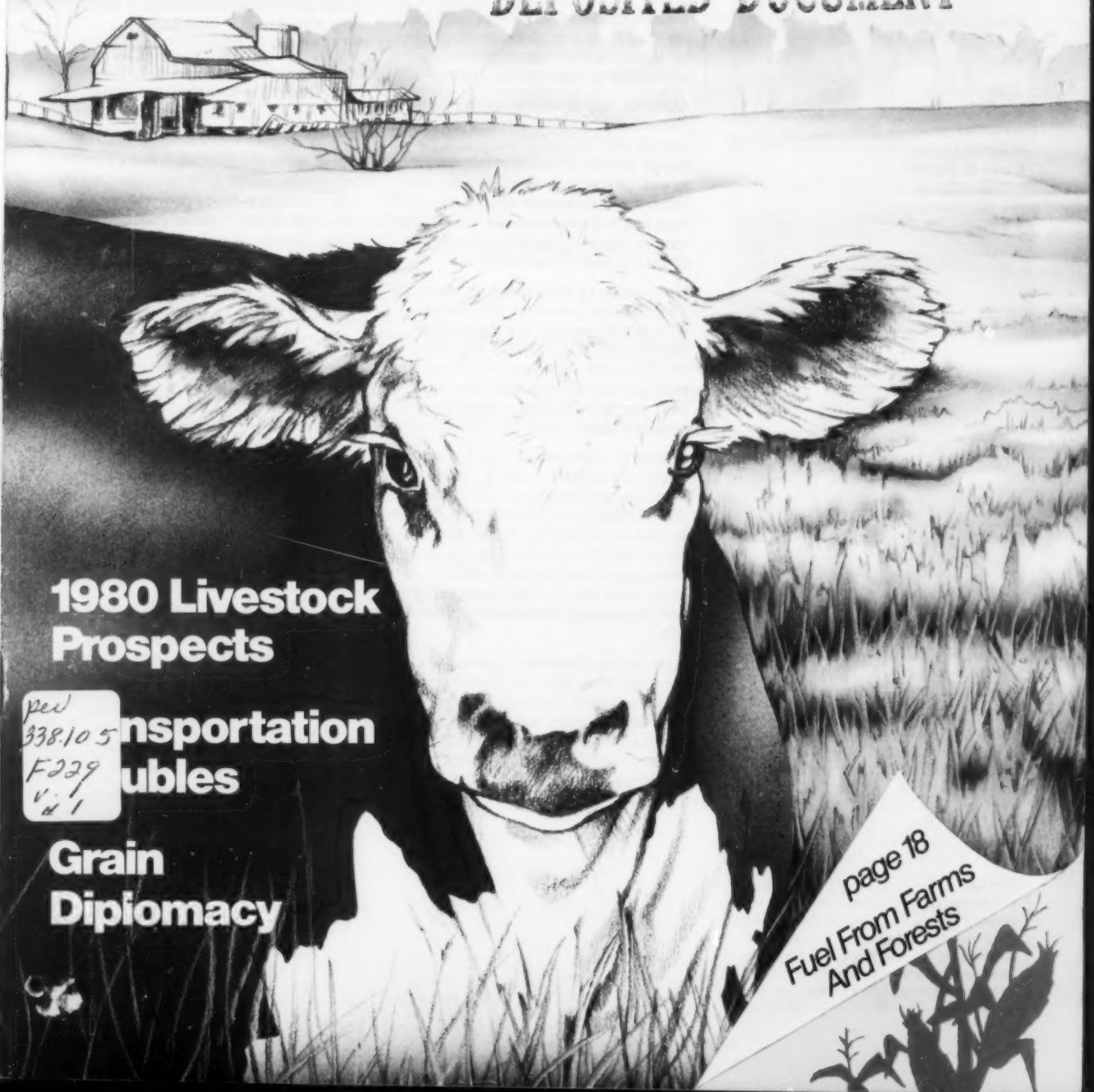

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Grain Diplomacy

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EDITORIAL

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The Secretary of Agriculture has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication has been approved by the Director of the Office of Management and Budget through January 1, 1981.

Welcome to *Farmline*, a new monthly magazine designed to serve U.S. agriculture of the 1980's.

Today's farmers and agribusiness people must have a reliable source of useful, timely, and practical information with which to make decisions.

Farmline, published by USDA's Economics, Statistics, and Cooperatives Service (ESCS), will provide both the overall picture of trends in agriculture, as well as a wide range of unadorned facts. It will also cover developments in rural life, natural resources, farm finances, and a host of related items which affect the lives of farm families.

We think you'll find *Farmline* magazine a very useful periodical. The writing style is businesslike, the information has practical applications, and the arrangement of material is orderly so that time-pressed farmers and other business people can quickly find items of special interest.

Behind the birth of *Farmline* is our effort to provide taxpayers with a more efficient way of getting out USDA information. *Farmline* replaces two long-published magazines, *Agricultural Situation* and *Farm Index*. Over the years, both magazines had achieved reputations—and many professional awards—for a high quality of agricultural journalism.

Agricultural Situation began serving crop reporters just after World War I. It was a welcome friend to generations of American farmers. But it was too brief to cover all the relevant facts, figures, and research information that today's farmers might want.

Farm Index, begun in the 1960's, was directed toward agribusiness and market specialists. It covered agricultural subjects from an economics perspective, based mainly on research.

By replacing these two magazines with *Farmline*, we hope to consolidate our efforts and produce the most informative and useful monthly magazine possible to serve you.

Farmline is designed to preserve the best characteristics of its predecessors. We intend to provide comprehensive coverage of agricultural economics, Crop Reporting Board survey results, foreign trade, rural life, commodity price and production prospects, and other information to help you stay up to date with current developments in agriculture and with what USDA is doing.

You'll quickly note that *Farmline* is different from its predecessors. It includes two-color charts, for example, to give you a quick, visual summary of important trends and developments.

After you've looked over this issue, please tell us what you think of it. Suggest how we can improve it, and let us know if there's information that you need which isn't being covered.

Our agency is in business to serve the American public—especially farmers and others involved in agriculture—so your ideas and opinions will count. Write to *Farmline*, Room 505 GHI Bldg., ESCS-USDA, Washington, D.C. 20250.

The end result of the surveys and research performed by ESCS' staff of experts is information. *Farmline* magazine is designed to provide you with direct access to the information you're most likely to need.

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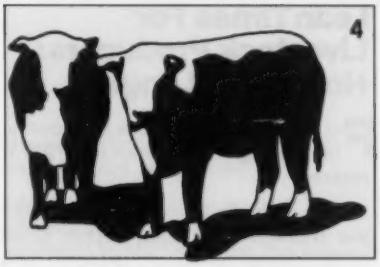

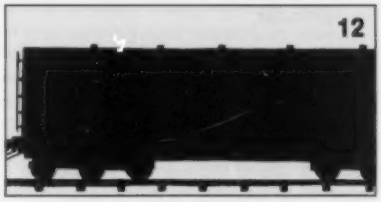

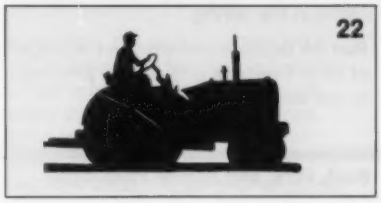

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Commodities

Lean Times For Livestock Producers: How Much Longer?

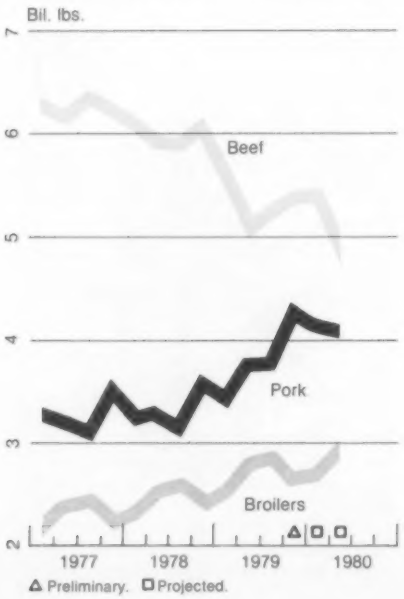
For producers of livestock and poultry, 1980 is beginning to look like 1979 in reverse.

Last year, the first two quarters featured the smallest total meat supply since 1975, strong consumer demand, and sizable profits for producers—cattlemen in particular.

As the year progressed, however, the meat supply grew as pork and poultry production mushroomed, offsetting a continued decline in beef. Despite sharply lower beef supplies, many cattle feeders found themselves trapped in a cost-price squeeze by fall because of the high prices they had paid for feeder cattle in the spring.

Red ink became common on the ledgers of most livestock and poultry producers in the second half of the year.

Beef, Pork, and Broiler Production



So producers have entered the new year much less certain about prices than they were going into 1979. The first half of 1980 will likely feature a near-record total meat supply, weak consumer demand, and negative returns for producers—hog producers especially.

On the other hand, optimism for better returns in the second half of 1980 is justified, especially if the economy rebounds.

Broilers And Hogs

Broiler producers began slowing the growth of production late in 1979 as their net returns dwindled alongside declining broiler prices. By this spring, broiler production could dip to near year-earlier levels.

Through the fourth quarter of 1979, broiler producers were faced with severe losses. For awhile it looked as if the lean times would continue into 1980, but consumer demand for poultry meat has proven to be stronger than anticipated. As a result, broiler prices began moving up again in December and are now expected to continue strengthening through the second quarter.

Hog producers were still increasing sow farrowings late in 1979, despite the collapse in hog prices that began last spring. Average prices for barrows and gilts fell from $51.98 in the first quarter of 1979 to $36.39 in the fourth quarter.

USDA forecasters say that hog prices could drop to the mid-$30's this spring, with pork production running 15 percent above a year ago. Hog producers have indicated plans to hold the number of sows farrowing in the first quarter of 1980 to near the 1979 level. So production will probably be maintained at close to year-earlier rates during the second half.

Cattle Prospects

Cattle producers, meanwhile, cut slaughter back sharply in 1979 as they began to rebuild their herds. Beef production will remain at a low ebb in 1980, although the January cattle and calf inventory showed the first increase since 1975.

The substantial profits reaped by cattle producers early in 1979 provided great relief from the long period of losses that led to herd liquidation beginning in 1975. However, the favorable situation caused intense competition for the limited supply of feeder cattle, with feeders bidding them up to nearly $90 a cwt. by April.

Fed cattle prices, meanwhile, began declining from their April 1979 high of $75, averaging only in the upper $50's by August and the upper $60's by the fourth quarter. So feeders who bought steers at such high prices last spring were losing money from late summer through fall.

Even though beef supplies so far this year are actually down from the low levels of a year ago, fed cattle are not likely to fetch the high prices of last spring. The disappointing returns of fed cattle suggest that feeder cattle prices will continue under pressure through the winter and spring. Cattle feeders will have to receive $65-$69 per cwt. for their cattle this spring to show a profit on the feeder cattle they bought in the winter.

However, USDA analysts advise cattle feeders to avoid pressuring the feeder cattle supply to the point they did last year and caution them that feeder prices much over $80 a cwt. should be weighed very carefully.

While fed cattle could bring as much as $72 a cwt. in the first half of the year, any sharp price increase similar to last year is unlikely. For one thing, with pork and poultry in larger supply and lower in price than last year, consumers will be quick to switch from beef at any sign of a rapid price increase.

Furthermore, consumers' real incomes have eroded since last spring, and this—combined with the steep rise in energy prices and higher unemployment—will be constraining demand for meat products anyway.

Production Costs

Meat production costs continued to increase rapidly during 1979. Corn rose from $1.86 a bushel in January to $2.72 in July, putting a squeeze on livestock producers' returns. Since last summer, however, corn prices have been coming down and are expected to average between $2.25 and $2.45 a bushel in the current marketing year.

U.S. corn production leaped to a record 7.8 billion bushels with the 1979 harvest, and this year's total supply has bulged to 9.1 billion. However, although the cutoff of grain exports to the Soviet Union has trimmed export prospects from 2.5 to about 2.3 billion bushels, USDA still expects 1979/80 corn prices to average higher than last year.

Prices for soybean meal are expected to average lower in 1980 than last year. Soybean production also set a record, and prices have been under pressure in spite of strong overseas demand.

Prices for protein meal will be greatly influenced by the size of the South American crops, which will be harvested this spring. For the year, meal prices are forecast to average between $160 and $200 a ton, compared with $190 in 1978/79. Soybean meal prices are not likely to be affected by the suspension of sales to the Soviet Union.

In addition to feed costs, most other inputs for livestock and poultry production were much more expensive in 1979. Farmers paid significantly more for fuel and energy, tractors and machinery, building and fencing materials, and interest on farm real estate.

Prices for all these production items will continue to rise this year, so meat producers—especially of hogs—will remain in a cost-price squeeze until their animals begin to bring higher prices later in the year.

Hog Cycle: Slip-Sliding Away

The hog cycle—that old, reliable indicator of expansion and contraction in the hog industry—seemed to dissolve at some point during the last decade.

Likewise, quarterly changes in sow farrowings began to lose their regular pattern as the once-sharp first quarter rise and second and fourth quarter declines became less pronounced.

Thirty years ago, the hog cycle was as regular as the seasons. Sow farrowings peaked every 4 years, with intermediate periods of decline. Prices rose and fell accordingly.

The hog industry itself was, of course, a prime factor in this cycle. Back in the 1950's, it comprised mainly farmers who would simply drop out of hog production when prices fell below the break-even level.

In the 1970's, this began to change. The hog industry grew more concentrated, more capital-intensive. In 1964, for example, hog operations selling more than 1,000 hogs each year made up only 7 percent of the market. But by 1979, such operations accounted for about 40 percent of total hog sales.

Statistician Doug Murfield, who heads the Crop Reporting Board's livestock branch, says that most of the expansion in hog production units is occurring outside of the "heart of the hog country"—Iowa and Illinois.

In the latest hogs and pigs inventory, Georgia, Kentucky, Minnesota, Nebraska and South Dakota all showed year-to-year increases in hog numbers of 20 percent or more. By contrast, Iowa and Illinois—which still account for about a third of U.S. hog production—had increases of 7 and 6 percent, respectively.

The industry shift to larger units has affected the hog cycle in two ways, according to Murfield. First, the new, large hog producers have more of a financial stake in keeping their operations running near capacity in order to spread overhead costs. They are less likely and less able to slow production down when hog prices drop.

Second, with these producers keeping most of their hogs in confinement, they maintain the number of sows farrowing at a more constant level throughout the year.

In addition, the cost of producing a hog at these new facilities is tied less to feed costs than to capital investments in equipment and buildings. Since feed costs have risen much slower than the costs of other inputs, feed now accounts for only about 50 percent of total costs—it used to make up nearly 70 percent of the total.

Thus, changing market prices for hogs and feed do not have so great an impact on hog producers as in the past. Producers tend to stay in business in the short run even if prices are low, as long as they can cover their cash costs.

All this has changed the nature of the hog cycle, making the forecaster's job more difficult. But one thing seems certain: Hog production will continue concentrating in larger units—much as the broiler industry has done—and the hog cycle will continue to undergo profound changes in the decade ahead.

CROP REPORTING BOARD NEWS

The Farm Count

The annual rate of decline in the number of U.S. farms may slow to only about 1 percent in 1980, according to USDA's Crop Reporting Board.

Farm numbers have been dropping by 1.5 percent or more each year since 1975. Last year, the decline was 1.6 percent as the number of farms slipped to 2,332,690—about a third as many farms as were around in the mid-1930's when the farm count was at its peak.

In most cases when a farm is sold, however, the buyer is another farmer. Therefore, while the statistics reflect the trend to fewer farms, they also show the land in farms holding relatively steady and the average size of farms increasing.

Last year, the loss of land to farming was less than a third of 1 percent of the more than 1 billion U.S. acres in farms, and the rate of decline may drop to about a fourth of 1 percent this year.

Of course, this means that fewer farmers are operating larger farms. Average farm size increased from 427 acres in 1975 to 450 acres last year. This year, 3 more acres may be added to the average farm.

For farm numbers and related estimates from 1975 through the present, a farm is defined as a place with annual sales of agricultural products of $1,000 or more.

Prices Farmers Pay: Up, Up

Although farmers posted a near-record income year in 1979, the prices they paid for production inputs rose at a much faster pace than did the prices they received for their products.

This conclusion emerges by comparing the Crop Reporting Board's index of prices received for farm products with the index of prices paid by farmers for commodities and services, interest, taxes, and wage rates.

How Indexes Work

In the indexes, average prices received and paid by farmers are set equal to 100 for 1967, which becomes the base year for computing changes in prices. With both starting from the same 1967 base, the relative rates of change between prices received and prices paid can easily be compared.

For example, in December 1977, the index of prices received for all farm products stood at 181, an 81-percent increase since 1967. However, the index of prices paid by farmers had reached 203, a 103-percent increase in the same period.

This indicates that the cost of farming had risen noticeably faster in the 10 years since 1967 than the prices farmers received for their products. However, it's worth noting that the price indexes record only price levels and don't take into account in-

Farm Trends

Year	Number of farms	Land in farms	Average farm size
	thousands	million acres	acres
1975	2,491	1,063	427
1976	2,454	1,059	432
1977	2,409	1,055	438
1978	2,370	1,052	444
1979	2,333	1,049	450
1980[1]	2,309	1,047	453

[1]Preliminary forecast.

Indexes Of Farm Prices Received And Paid

	Prices received			Prices paid[1]
	All farm products	All Crops	Livestock & products	
	1967=100			
1976				
Jan.	185	191	181	189
Dec.	179	190	169	193
1977				
Jan.	184	200	170	198
Dec.	181	183	180	203
1978				
Jan.	187	188	186	209
Dec.	222	205	239	226
1979				
Jan.	232	209	252	234
Feb.	241	216	264	238
March	246	214	274	243
April	244	212	272	246
May	246	220	269	248
June	244	233	255	249
July	244	240	250	251
Aug.	237	235	239	251
Sept.	241	225	255	254
Oct.	236	224	248	256
Nov.	238	223	251	256
Dec.[2]	239	220	256	259

[1]Index of prices paid by farmers for commodities and services, interest, taxes, and wage rates.
[2]Preliminary.

creased yields and more efficient production practices which can hold down or even reduce costs per unit of output, regardless of input price rises.

Catching Up

Nevertheless, looking only at the price indexes, the 1978 index of prices received for all farm products gained on the index of prices paid.

The prices received index rose 35 points during the year, from 187 in January to 222 in December. Over the same period, the index of prices paid rose only 17 points, from 209 in January to 226 in December.

Consequently, the gap between the two indexes narrowed from 22 points in January 1978 to only 4 points by December. The primary reason: dramatic increases in farm prices for livestock and animal products.

Good Start

Livestock prices continued their rapid climb early in 1979, and the difference between the two indexes declined to 2 points in January, with prices received at 232 and prices paid at 234. In February and March of last year, the index of prices farmers received for all farm products actually exceeded the index of prices paid—for the first time since July 1976.

From that point, however, farm prices for livestock went into a steady decline which lasted until September. Although livestock prices picked up again, the index of prices received for livestock and products ended the year only 4 points higher—at 256—than it began 1979.

Crop prices dropped slightly in March and April, gained through July, and then slipped each month for the remainder of the year. The index of prices received for crops ended the year at 220, 11 points higher than in January.

Costs Rise Faster

While both crop and livestock prices were having their ups and downs, however, the cost of farming rose slowly but steadily. From January's 234, the prices paid index rose 25 points by December, compared with the 7-point rise for the year in the prices received index for all farm products (crops and livestock).

Even though the cost of farming rose considerably faster than farm product prices in 1979, heavy marketings from record production tipped the balance in favor of farmers, and net farm income took a sharp upward jump.

Repeat Performance

It's becoming almost routine, but still remarkable. Yes, U.S. farmers set another record last year, boosting crop production a tenth from 1978.

Farmers expanded acreage in leading crops by 3 percent and got sharply higher yields for grains, soybeans, and cotton. Corn yields leaped 8½ bushels to reach more than 109 bushels per acre, one of the sharpest rises ever in a single year.

According to USDA's Crop Reporting Board, which coordinates the statistics gathering program of state crop and livestock reporting services, production records were set for corn, soybeans, sunflowers, and hay. The wheat crop was the second largest ever, and cotton production was the largest since 1965. Sugar and tobacco growers, however, faced production declines.

Despite the output gains, farm prices for most major crops are expected to average well above their 1978 levels. Prices for 1979 production are likely to average 19 cents per bushel higher for corn and 79 cents higher for wheat. However, soybean prices may fall 54 cents a bushel.

Taken together, the higher prices and larger production boosted the total value of 1979 crops to a record $74 billion—up $10 billion from 1978. The value of field crops rose nearly $9 billion to $64 billion, while the value of fruit and nut crops increased to $6 billion and commercial vegetable crops rose to almost $4 billion.

Of the $74 billion in total crop value, corn for grain accounted for almost $19 billion, up about $3 billion from 1978; soybeans $14 billion, up $1.4 billion despite lower prices; and wheat about $8 billion, up $2.7 billion.

Production And Prices Of Selected Crops

Crop and Unit	Production			Average farm price[1]		
	1977	1978	1979	1977	1978	1979[2]
	million units			dollars per unit		
Corn for grain (bu.)	6,425.5	7,086.7	7,763.8	2.02	2.25	2.44
Sorghum for grain (bu.)	793.0	747.8	814.3	1.82	2.02	2.31
Oats (bu.)	750.9	595.9	534.4	1.10	1.19	1.31
Barley (bu.)	420.2	449.2	378.1	1.78	1.92	2.28
Wheat (bu.)	2,036.3	1,797.5	2,141.7	2.33	2.98	3.77
Rice (cwt.)	99.2	133.2	136.7	9.49	8.16	9.70
Soybeans (bu.)	1,761.8	1,870.2	2,267.6	5.88	6.66	6.12
Sunflower[3]	2,760.5	3,852.5	7,305.6	10.16	10.73	8.78
Cotton[4]	14.4	10.9	14.9	0.523	0.584	0.615
Hay (ton)	131.3	142.2	145.9	53.80	49.60	59.20
Potatoes (cwt.)	354.6	365.2	347.6	3.55	3.38	3.47
Tobacco (lb.)	1,912.8	2,024.4	1,547.4	1.186	1.324	1.406
Sugarbeets (ton)	25.0	25.7	22.0	24.20	25.20	[5]
Apples, com'l (lb.)	6,672.6	7,607.4	7,766.7	0.105	0.104	0.107

[1]Crop marketing year. [2]Projected. [3]Production in million pounds; average farm price per cwt. [4]Production in million bales; average farm price per pound. [5]Not available.

Cattle on Feed Reports: It Doesn't Take an Expert

It doesn't take an expert to demonstrate that USDA's *Cattle on Feed* reports are a useful marketing tool and not a threat to producers' prices, according to Jim Kreber, a livestock statistician with the Crop Reporting Board.

It's all in the numbers, says Kreber, who, like most statisticians, places his faith in figures.

He explains that the monthly *Cattle on Feed* reports keep cattlemen a jump ahead on upcoming slaughter supplies by detailing the number of cattle on feed, placements, and marketings in the seven major feeding states. The January, April, July, and October reports carry similar data on feedlot activity for the top 23 states, which account for about 95 percent of total U.S. fed marketings.

Feedlot operators use this information directly—through their own forecasts of slaughter supplies—or, often without knowing the source, indirectly—through the analyses of farm advisers, writers, and broadcasters.

Like any other businessperson, a cattle feeder needs to know what's down the road, and expertise in using outlook information to plan marketing strategy can be a big factor in profits.

By knowing roughly how many head will be going to slaughter in coming months, for example, some cattle feeders can adjust their marketings at times to get the best possible prices for their finished animals.

How Prices React—On The Record

While that's not likely to be disputed, there has been speculation about the direct effect of the reports on cattle prices, according to Kreber. Even if the reports simply provide an accurate indication of the actual situation, does such market intelligence in itself tend to put a damper on prices?

Again, it's the figures that tell the story, says Kreber. After each of the monthly reports, he watches prices in cattle markets. His records show that prices sometimes go up and sometimes go down following the reports.

However, the overall record for recent years shows that cattle prices have risen significantly more often than they've fallen after the release of the *Cattle on Feed* reports.

Kreber recently completed his file on 1979, following his usual practice of recording—among other figures—weekly average cash prices per cwt. for Choice steers at Omaha. To focus on how prices respond after the reports are issued, he compared the average price for the week before each report was released with the prices for the week of release and the week following release.

Keeping Score

The table on this page duplicates Kreber's record for last year. As the table indicates, there's no consistent pattern of price response to the release of the *Cattle on Feed* reports.

However, for the year as a whole, Choice steer prices at Omaha rose nine times and dropped only three from the week before to the week of release. From the week of release to the week after, prices increased eight times and declined four.

Moreover, when all the price changes are combined, the annual net dollar change for both week-to-week periods is positive—prices per cwt. gained more than $10 overall from the week before to the week of release, and $3.64 from the week of to the week after release.

The table makes another important

1979 Choice Steer Prices:[1]
Price Reaction Following Monthly Cattle On Feed Reports

Release date of report	Change in cattle on feed numbers from previous year	Weekly average price:			Change from:	
		Week before	Week of release	Week after	Week before to week of release	Week of release to week after
	percent		$ per cwt.		$ per cwt.	
Jan. 19	-1	59.58	60.88	61.72	+1.30	+0.84
Feb. 13	+1	63.38	64.55	65.22	+1.17	+0.67
March 13	+1	69.72	69.80	73.30	+0.08	+3.50
April 19	-6	74.38	77.00	75.95	+2.62	-1.05
May 14	-2	75.65	72.85	72.80	-2.80	-0.05
June 12	-4	68.35	69.68	68.10	+1.33	-1.58
July 19	-6	67.92	67.72	64.70	-0.20	-3.02
Aug. 14	-8	58.28	63.32	65.90	+5.04	+2.58
Sept. 14	-13	66.84	68.35	68.82	+1.51	+0.47
Oct. 18	-13	67.15	64.62	64.88	-2.53	+0.26
Nov. 14	-14	64.85	67.32	68.00	+2.47	+0.68
Dec. 14	-11	67.30	67.38	67.72	+0.08	+0.34
No. of times prices increased:					9	8
No. of times prices decreased:					3	4
Annual net change ($ per cwt.):					+$10.07	+$3.64

[1]Weekly average cash prices per cwt. for Choice slaughter steers, 900-1,100 pounds, at Omaha. (Source: AMS Market News)

point: that no consistent relationship is apparent between the direction of change in cattle on feed numbers and the direction of change in prices.

If the cash market for Choice steers was directly determined by the cattle on feed numbers in the reports, increases in reported inventories would trigger price declines and decreases in inventories would boost prices.

Taking A Longer View

Although 1979 is only 1 year, an examination of the previous 4 years yields similar results. Prices rose as often as, or more often than, they fell in 3 out of 4 years for both week-to-week periods. Likewise, some annual net dollar changes following the reports were up and some were down as illustrated by the chart on page 9. However, most net dollar changes were positive for both week-to-week periods.

The chart on page 10 combines the 5 years from 1975 to 1979, indicating the number of price changes up and down as well as net dollar changes for different groups of *Cattle on Feed* reports.

For all 60 monthly reports issued during the 5 years, prices increased 36 times and declined only 24 times for both week-to-week periods. The net dollar change for all the reports combined was an increase of $11.81 for the first week-to-week period and $7.71 for the second.

Furthermore, the absence of any clear relationship between the direction of change in reported cattle on feed numbers and the direction of price change is just as apparent as it was in looking at 1979 alone.

Thirty-one of the reports showed an increase in cattle on feed numbers, and 28 showed a decrease (one indicated no change). For both groups of reports, and for both week-to-week periods, prices rose more often than they dropped, and all four net dollar changes were positive.

Of the 20 quarterly reports (which cover 23 states) issued from 1975 to 1979, prices increased as often as, or more often than, they dropped in both week-to-week periods. The net dollar change was positive for the first week-to-week period and negative for the second (this isn't the rule, because the exact reverse was true at the end of the 1975-78 period).

Why Prices React

Even though the record clearly shows Omaha steer prices rising more often, and by a greater dollar amount, than they dropped following *Cattle on Feed* reports, the relationship between prices and market information is much more complex. In fact, livestock analysts admit that there's still a lot to learn about how market information and other factors affect prices.

Day-to-day fluctuations in cattle prices probably reflect slaughter plant capacities and needs as much as anything else. Over a period of time, cattle prices respond to current and prospective supplies of beef—and competing meats—as well as to the strength of consumer demand.

Obviously, any information contributing to the overall picture—including cattle-on-feed numbers, placements, and marketings—can affect the relative bargaining positions of cattle buyers and sellers.

However, the large number of important indicators, the fact that different factors may be more important at different times, the variety of information sources available to market participants, and the so-called "psychology" of the market all make it difficult to generalize about the impact of specific sources or types of information.

Therefore, because the price reaction after *Cattle on Feed* reports does not appear to follow a logical pattern (prices moving in the opposite direction of cattle-on-feed numbers), that does not mean that the reports have no effect on the market.

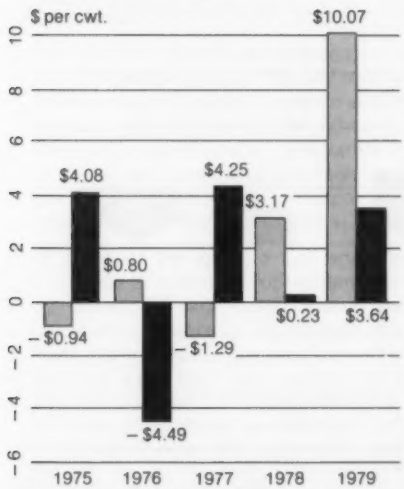
Reducing Uncertainty

One price-related benefit of *Cattle on Feed* and other Crop Reporting Board reports is their role in reducing market uncertainty. Uncertainty is the traditional enemy of agriculture. It increases costs across the board.

Improved production and marketing information contributes to market efficiency and reduces marketing costs. For example, less uncertainty surrounding the potential livestock supply allows meatpackers to operate more efficiently—reducing their costs, cutting farm-wholesale price margins, and raising livestock prices to cattlemen.

However, these benefits cannot be easily quantified, nor would they likely explain the price response to individual reports.

Choice Steer Prices: Annual Net Changes Following Cattle on Feed Reports



Annual net price change, week before to week of release of monthly Cattle on Feed reports, based on weekly average cash prices per cwt. for Choice slaughter steers, 900-1,100 lbs., at Omaha.

Annual net price change, week of to week after release of monthly Cattle on Feed reports, based on weekly average cash prices per cwt. for Choice slaughter steers, 900-1,100 lbs., at Omaha.

Many analysts describe the relationship between individual reports and prices in terms of an "announcement effect." Slaughterers, meat packers, and other market participants are constantly developing and updating their own market analyses, which play a major role in setting prices.

The Crop Reporting Board's reports provide a check on the market by presenting the same objective and comprehensive survey information to all market participants at the same time.

The announcement effect theory suggests that price movements immediately following the release of a report indicate how accurately the private sector has anticipated the information in the report.

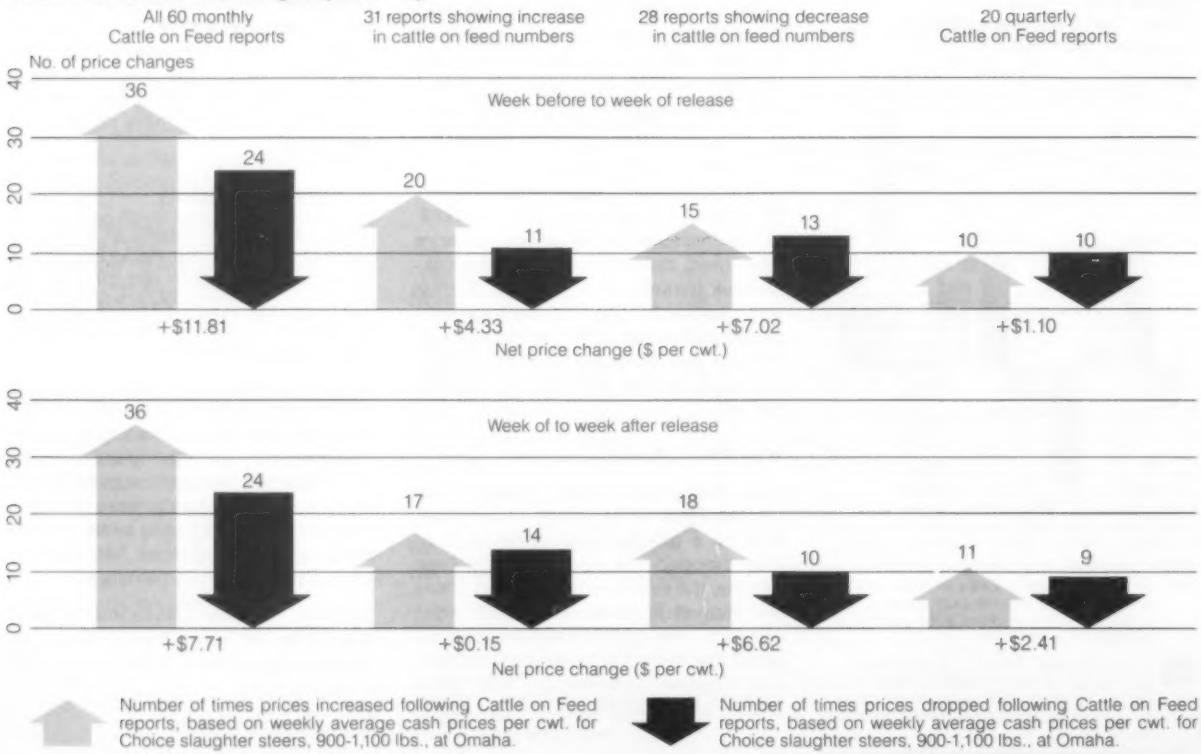
If the information released was correctly anticipated by market participants, prices might still respond to other factors but not to the report itself. Likewise, an increase in cattle-on-feed numbers could easily have the seemingly illogical effect of boosting prices if the increase was smaller then the trade expected, while a drop in on-feed numbers could easily dampen prices.

However, condemning the information source for a negative price reaction ignores the other market factors, including the actual supply-demand situation behind the price downturn, as well as the record which shows that prices have risen considerably more often than they've dropped.

Most importantly, perhaps, condemning the source ignores the value of market information to producers who know its limitations and how to use it in planning.

The *Cattle on Feed* report, along with two other Crop Reporting Board reports—*Cattle*, the twice-a-year cattle inventory report, and the monthly *Livestock Slaughter*—can help operators forecast upcoming slaughter supplies and stay on top of the market. To start receiving these reports, write the Crop Reporting Board, Room 0005-South, ESCS, USDA, Washington, D.C. 20250. Ask for the reports by their title.

Choice Steer Price Changes (1975-79)



Slower (But Painful) Production Cost Hikes Ahead

The cost of farming will not increase as rapidly this year as it did in 1979, but producers may feel the pinch more.

Farm production expenses rose a whopping 16 percent last year, according to USDA economists. The 1980 figure, they predict, will be up about 11 percent. But unlike last year, farm earnings may not keep pace, so production expenses are likely to be more of a burden to many farmers.

Here's a breakdown of prospects for major farm inputs:

Farm Equipment

Machinery prices are likely to rise about 11-12 percent, which may encourage some farmers to try to get another year out of the old combine. Forecasters predict that farmers will begin to put off buying big-ticket machinery when they measure their earnings against the prices of other inputs, such as fuel and short-term credit.

Farmland

Prices for farmland have increased more than 200 percent since 1970, and no one seems to want to predict when or where it will end. Most experts agree, however, that even at current prices, land earnings in the first few years after purchase may not be sufficient to pay principal and interest under typical loan terms.

In spite of the costs, most analysts anticipate that demand for farmland will be strong through 1980. There are continued incentives to enlarge the farm. More important, there is very little land for sale. Each year, only 2 to 3 percent of the land changes ownership, and that percentage has recently been declining. Those who want land and have access to the funds to purchase it are competing for the relatively few parcels for sale.

The expected decline in net farm income and, to some extent, higher interest rates on real estate loans, suggest that land values may grow at a slower rate this year than the 16-percent increase between November 1978 and November 1979.

Farm Credit

Don Wilkinson, governor of the Farm Credit Administration, said recently that credit for agricultural producers will be harder to find and tougher to get in 1980. But he added that "for a good operator with good records, things shouldn't be too difficult if plans are made early."

The Farm Credit System obtains the bulk of its loan money through the sale of securities in national and international money markets. Thus, funds are available, but the cost has been going up.

Fertilizer

Farmers can expect to pay at least 20 percent more for fertilizer this year, with some chemicals such as anhydrous ammonia and urea going even higher.

Potash fertilizer prices are also expected to rise, not only because of energy prices but also because there are very few producers worldwide. Recent forecasts indicate that the growing demand for potash could outstrip the available supply as early as 1985.

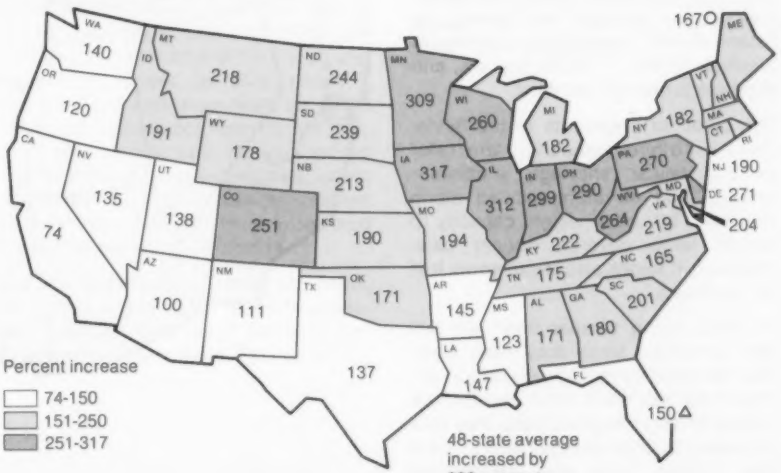
Farm Labor

Farm wages are expected to go up 7 to 8 percent this year, due largely to the nearly 7-percent increase in the minimum wage, which took effect January 1. The minimum went from $2.90 per hour to $3.10, very modest when compared with cost rises of other farm inputs. However, wage rates in areas affected by collective bargaining agreements may rise more sharply.

Pesticides

Price boosts for pesticides are largely the result of petroleum increases. While pesticide supplies are expected to be readily available, prices for herbicides and insecticides are likely to increase 5 to 10 percent. Some fungicides may cost 15 to 20 percent more.

Percent Increase in Average Value of Farm Real Estate per Acre March 1970–February 1979



Based on index numbers of average value per acre.

○ Average increase for Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut.

△ Average of the percentage change in Georgia and Alabama index values.

Transportation Troubles: Here For The Long Haul?

Although the decision to suspend shipments of agricultural products to the USSR has removed some of the pressure from the U.S. transportation system, it doesn't solve the immediate or long-term problems facing rail and barge lines.

Even with the cutoff of Soviet deliveries this year, U.S. export volume is still expected to set a new record, and grain has been moving through U.S. ports at an unprecedented pace. With about 124 million metric tons of grains and soybeans expected to make their way to gulf and ocean ports in 1979/80, the inland transportation system is feeling the strain.

Railroads and barges deliver most of the grains and soybeans to ports, and both carriers are experiencing problems. In fact, grain and soybean shippers report that rail and barge tieups have cost them time and money.

Railroads Face Challenge

Railroads face a continuing shortage of railcars for moving grain. Even though railroads have invested heavily in new equipment to handle bulk agricultural products, railcar shortages still occur during peak harvesttimes. During the recent harvest, average daily shortages reached 10,000 to 15,000 railcars, and shortage problems still exist.

The cutoff of shipments to the Soviet Union has offered some short-term relief to the railcar shortage problem—especially to elevators located along lines with the track weight capacity to handle large covered hopper cars. However, it might also mean some lost rail revenues.

Shippers along smaller lines will still have problems since they have fewer alternative methods of moving commodities to market. When rural elevators are unable to get enough railcars, they face increased interest charges on the grain they cannot move and late-delivery penalties from grain purchasers. These increased costs are passed on to the grain producers—whose income suffers.

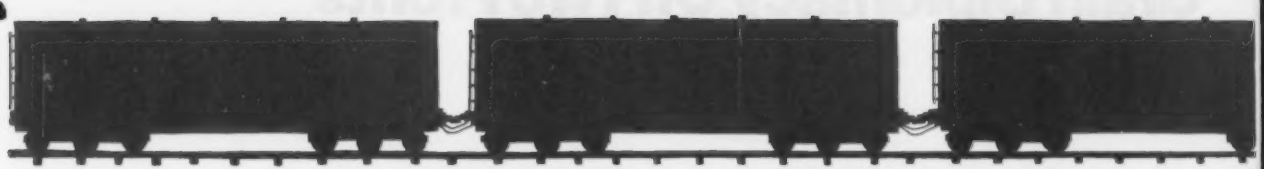
Perhaps even more serious than railcar shortages, some farmers may lose rail service altogether if parts of the Rock Island and Milwaukee Railroads are abandoned. Both railroads are having cash flow problems and, although the final resolution of their problems is not known, some farmers have already suffered loss of service. Together, these two lines handled more than a tenth of all rail grain shipments from 1975 to 1979.

Last fall's work stoppage on the Rock Island Railroad affected almost 1,700 grain elevators in a 13-state area. It forced rerouting of grains to alternative destinations. This backed up grain inventories at rural elevators, filling some to capacity—again resulting in increased costs to shippers and producers.

The situation facing these two railroads could be indicative of what may happen to larger portions of the agricultural rail system.

Railroads are trying to cut costs in order to compete with barge and truck carriers. In recent years, they have moved toward serving a smaller number of routes, concentrating on those with high-traffic density, and primarily hauling bulk materials. Shippers and producers in areas with terminated rail service have had to find other methods of

U.S. Waterways



getting their produce to market—not always an easy task.

Reduced regulatory control over the rail system may accelerate the movement of railroads toward mainline service unless it is accompanied by changes in the operating environment for railroads. Railroads contend that they need greater opportunity to develop and introduce cost-reducing techniques.

Barge Backups

The nation's river system, like its railroads, has its problems. The volume of grain moved by barge has risen sharply in recent years—now accounting for 30 to 40 percent of total U.S. grain exports.

The U.S. suspension of agricultural deliveries to Russia resulted in a temporary drop in barge rates as demand fell. As of mid-January, approximately one-third of the barge fleet was tied up at Gulf ports waiting to be unloaded to vessels bound for export destinations. Barges were sitting empty along the Illinois river as they waited for congestion to ease at Gulf ports.

Most grain shippers preferred to keep their grain in elevators where its quality could be monitored rather than risk shipping it into the congested port areas where it could deteriorate as it waited to be unloaded from barges.

Although the record 1979 harvest, the suspension actions, and the refusal by International Longshoremen's Association workers to load any ships bound for the USSR all affect this year's transportation picture, each year the movement on inland waterways is limited by physical restraints such as icing, variable water levels, and lock capacity on the Upper Mississippi River.

The Mississippi River leads all other river systems in transporting farm inputs, grain, and soybeans. Its capacity problem is centered at Locks and Dam 26, just below the junction of the Illinois and Mississippi Rivers. In 1978, nearly 1 billion bushels of grain from states on the Upper Mississippi River (Minnesota, Wisconsin, Iowa, and Illinois) moved south through these facilities, while more than 2.5 million tons of fertilizer and fertilizer materials from Texas and Louisiana ports moved north.

But the system faces major problems. Recent labor strikes at lake ports probably diverted some grain traffic to the Mississippi River system. This rerouting, along with the deteriorating condition of the locks, has severely hampered barge movement through Locks and Dam 26. And it doesn't appear that the situation will soon improve, since shipments will exceed the facility's operating capacity in the next year or two, resulting in further backups.

Although Congress has authorized the repair and enlargement of the facility, construction has been delayed by environmental constraints. In addition, water carriers will have to pay a waterway users tax beginning in October 1980, so shippers will have to pay higher barge rates to offset the water carriers' added costs. These increased costs will undoubtedly trickle back to take a share of the grain producer's income.

The Final Factor: Fuel

Fuel costs will continue to disrupt the agricultural transportation system. Continuing tight supplies of both fuel and transportation equipment will inevitably lead to higher transportation rates. In the short run, this will mean increased costs to shippers and their customers.

But, in the longer run, higher fuel costs will lead to increased efforts to find more fuel-efficient methods of transporting agricultural products.

FEATURE

Grain Diplomacy On Two Fronts

The following article is based, in large part, on testimony by the Secretary of Agriculture on matters related to the partial suspension of agricultural trade with the USSR. It is designed to provide the Farmline audience with the same information that was being presented to Congress at the time this issue was being prepared.

"I am determined to minimize any adverse effect on the American farmer from this action."

President Carter
January 4, 1980

Farmers were reported to be supportive, but concerned, after hearing these words announced along with the partial suspension of grain trade and other wide-ranging sanctions in response to the Soviet invasion of Afghanistan.

Grain farmers, in particular, had been counting on record export sales to hold up prices for 1979's bumper crop. Facing highly uncertain price—and income—prospects, they immediately needed to know how and when the government would protect them from an economic setback. The answer came quickly.

The suspension announcement was closely followed by a series of moves to shore up grain prices here while protecting U.S. interests abroad.

The suspension prohibits shipments of agricultural products to the USSR above the 8 million metric tons of grain committed under the 5-year grain sales agreement (Oct. 1, 1976-Sept. 30, 1981).

In effect, the suspension means that about 13 million metric tons (512 million bushels) of corn and 4 million tons (147 million bushels) of wheat—not to mention around a million tons of soybean products and small quantities of other U.S. farm goods—that would otherwise have gone to the Soviets will not be delivered to them .

The goal of recent domestic policy initiatives, according to Secretary of Agriculture Bob Bergland, is to leave farmers in virtually the same position as if all the sales to the Soviets had gone forward.

Bergland discussed the actions being taken, and their impacts on U.S. and Soviet agriculture, in testimony before the Agriculture Committee of the U.S. House of Representatives on January 29. However, his first comments were on the early results.

Upbeat Outlook

"The reaction of the market, the reaction of the vast majority of farm leaders, and the reaction of farmers themselves has been enormously positive," Bergland reported to congressmen.

Cash prices fell when markets reopened after the suspension, but they quickly rebounded and, by early February, were at or above the pre-suspension January 4 levels. While not suggesting that every objective had yet been met, Bergland said that the outlook is upbeat.

Even without Soviet sales, U.S. agricultural exports are expected to set records in both volume and value. Wheat and feed grain export volume this fiscal year should top 100 million tons, compared with 93 million last year. Corn exports are expected to rise more than 140 million bushels above last year's record.

"It is critical to understand that a good deal of the market strength of recent days is coming from the fundamental understanding that the Soviet Union is not the whole ball game for American farm exports," Bergland said (see related story on page 16).

Bergland said the government response to protect farmers from the consequences of the suspension includes both short-term and longer term actions.

Short Term: Assuming Obligations

The first priority was in dealing with the 13 million tons of corn and 4 million tons of wheat not going to the USSR because of the suspension. Contracts between U.S. exporters and the USSR had already been signed for much of that grain.

"Failure to meet the export contracts would have resulted in a complete collapse of the market," Bergland said. "In short, it could have meant hundreds of millions of dollars of losses throughout the market chain, ultimately hitting the farmer hardest of all."

This would have happened as creditors forced the exporting companies to dump those contracts on the market in order to pay off the loans which financed the contracts. Prices would have toppled all the way down to the local elevators where farmers sell their grain.

To avert panic selling and price collapse, the Commodity Credit Corporation (CCC) has been authorized to assume the contract obligations on up to 10 million tons of corn (about 394 million bushels) under contract for export to the USSR.

The CCC can either take physical delivery of the corn, or it can sell the contract to a third party. If the CCC takes delivery, the corn cannot be sold for use in the U.S. at a price lower than the equivalent of $3.15 per bushel at the farm—150 percent of the loan rate. If the contract is sold to a third party, the price must be at or above the pre-suspension January 4 price—around $2.40 per bushel.

As for the wheat originally intended for shipment to the Soviets, all the contract obligations will be assumed by the CCC but, unlike corn, none of the wheat will move back into commercial channels. The Agriculture Secretary said it will be reserved for use in U.S. foreign food assistance programs.

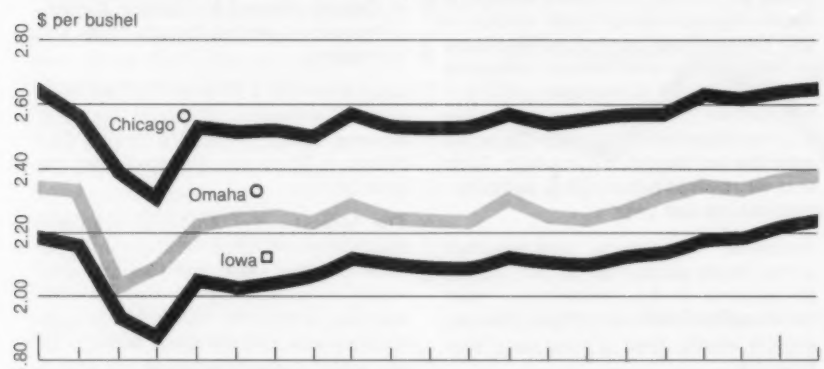
Long Term: Programs And Markets

While the other measures were designed to deal with the potential immediate impact of grain already in market channels, farm program changes were made to protect farm markets over the longer term by isolating the large quantities of grain still owned by farmers, as well as the grain farmers had intended to plants in 1980 to meet the expected Soviet demand.

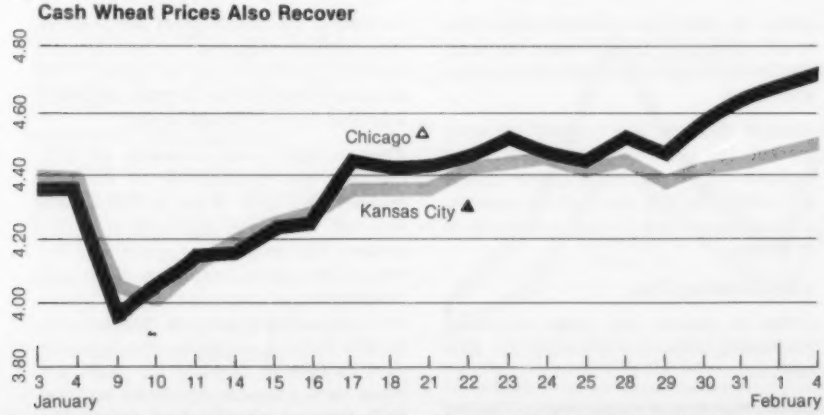
Farmers were offered added incentives to place their grain in the farmer-owned reserve rather than on the market where it might depress prices. USDA actions included:

- Increasing the wheat loan price from $2.35 to $2.50 a bushel and the corn loan price from $2.00 to $2.10, with comparable increases for other feed grains;
- Increasing the reserve release price for wheat from $3.29 to $3.75 a bushel and the call price from $4.11 to $4.63—both actions raise the price levels that must prevail before reserve wheat is released on the market;
- Increasing the reserve release price for corn from $2.50 to $2.63 a bushel and the call price from $2.80 to $3.05 a bushel;
- Waiving the first year interest costs for the first 13 million tons of corn (512 million bushels) placed in the reserve after Jan. 7, 1980. This option is also available to farmers who placed corn in the reserve between Oct. 22, 1979, and Jan. 7, 1980, but they must go to their ASCS office and sign a new reserve agreement;
- Increasing the reserve storage payments from 25 to 26.5 cents per bushel.

Cash Corn Prices Rebound to Pre-suspension Levels



Cash Wheat Prices Also Recover



○ Terminal prices for No. 2 yellow corn. □ Midpoint of price range bid to farmers at elevators in central Iowa.
△ Terminal prices for No. 1 soft red winter. ▲ Terminal prices for No. 1 hard red winter.

Those farmers who complied with last year's farm programs are eligible to put their 1979 crops under government loan or in the farmer-owned reserve. Because there will be no 1980 set-aside, all producers of feed grains and wheat are eligible for loans on their crops and for the reserve program. Movement of grain into the reserve will be a major price supporting factor this year.

Another way to tighten supplies is to move more grain into export channels. The U.S. heavily promotes its farm products, and there has been fresh encouragement since the suspension.

Beyond farm program changes and increased export activity, the production of grain for gasohol can be a significant factor in future grain production and demand. The Administration has unveiled a program to quadruple fuel alcohol output by the end of this year.

Setbacks For The Soviets

Although U.S. farmers must focus considerable attention on these domestic policy changes, they can be assured that the suspension of grain sales, by itself, struck a telling blow to Soviet plans for the new year, Bergland said.

Soviet buyers are reportedly scrambling to pick up whatever extra grain might be available from other markets, but most U.S. trading partners—including Canada, Australia, and the countries of the European Community—have promised not to replace U.S. grain.

"Soviet meat production in 1980 could be down significantly from 1979," Bergland said. "The prospective drop . . . could be expected to lower consumption roughly by 4 percent and aggravate the concerns of Soviet consumers expecting further improvement in meat supplies."

WORLD UPDATE

A World Of Customers

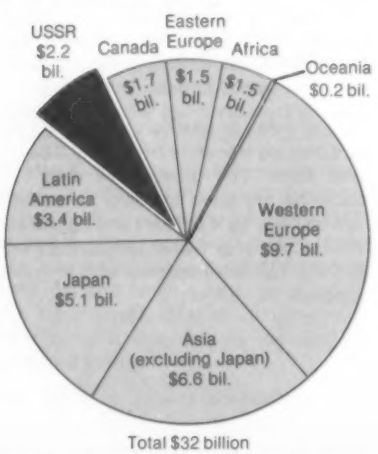
Although constantly in the news—even before the recent suspension in U.S. sales—agricultural trade with the Soviet Union is not exactly the lifeblood of the U.S. export picture.

While severe crop shortfalls coupled with the drive to improve diets have caused the USSR to sharply expand imports of U.S. grain, the USSR is only one of over 100 nations that buy U.S. farm products.

In fact, of the record-breaking $32 billion in U.S. agricultural exports during the October 1978-September 1979 fiscal year, sales to the Soviet Union amounted to only $2.2 billion—less than 7 percent of total U.S. export value.

Japan—the No.1 single-country market—spent over twice as much as the Soviet Union, with imports of a wide variety of U.S. agricultural products totaling $5.1 billion. Even the record-large Soviet purchases that had been anticipated this year were expected to trail sales to Japan by more than $1 billion.

U.S. Agricultural Export Markets (By Value, Fiscal 1979)△



Total $32 billion

△ Adjusted for transshipments through Canada.

While grain exports to the Soviet Union make headlines, Japan has been the major customer for U.S. feed grains in most recent years. In 1978/79, the Soviet Union did lead in purchases of corn, but Soviet participation in the corn market has traditionally been erratic. Japan, the largest purchaser of corn in 9 of the last 10 years, has been the more reliable customer.

However, even Japan accounts for less than a sixth of the dollars earned from U.S. farm product sales abroad. The U.S. export picture is so diversified and markets so numerous that U.S. farm sales are not dependent on any one country or bloc of countries.

European Markets

About 20 nations in Western Europe, a major regional market, took a total of $9.7 billion in U.S. agricultural products in 1978/79. The nine member countries of the European Community (EC) accounted for three-fourths of this. In the EC, the Netherlands and West Germany were the two largest U.S. markets. Each took well over $1 billion in U.S. agricultural products last year.

Soybeans, feed grains, and assorted animal feeds accounted for over half of the exports to the Netherlands. West Germany's purchases included oilseeds, protein meals, feed grains, nuts, and tobacco.

Other EC member countries important to U.S. exports in 1978/79 were Italy and the United Kingdom. Sales to Spain were also large.

Eastern Europe is a rapidly growing market for U.S. farm products. The region's eight nations together spent $1.5 billion on U.S. agricultural exports. Poland accounted for over one-third of this total.

Fast-Growing Asia

Sales to around 40 Asian countries (excluding Japan) accounted for $6.6 billion.

South Korea is a major market, taking more U.S. cotton than any other country. Total agricultural exports to South Korea reached $1.4 billion in 1978/79.

China is another fast growing market for U.S. farm products, especially cotton. Rapidly closing in on the billion-dollar mark, sales to the People's Republic of China in 1978/79 increased 148 percent from the previous year.

Although U.S. sales to over 50 nations in Africa in 1978/79 declined slightly from the previous year, the region, paced by Egypt, still accounted for $1.5 billion in purchases.

The Western Hemisphere

Despite severe transportation problems at home, Canada managed to remain one of the largest single-country importers of U.S. farm goods. In 1978/79, sales to Canada reached $1.7 billion. Canada is the largest market for U.S. fruits and vegetables.

Latin America, with around 20 markets, shows increasing potential for U.S. farmers. Sales in 1978/79 totaled $3.3 billion, a 22-percent increase from the year before.

The largest Latin American market—Mexico—could become a billion dollar customer this year. The Mexican government is striving to improve the standard of living for low income groups. If successful, this will boost demand for many U.S. agricultural products.

Following the USSR grain suspension, U.S. officials agreed to sell Mexico nearly 5 million tons of grain. This included a portion of the grain originally intended for the Soviet Union.

The number and diversity of U.S. markets, the productivity of the U.S. farmer, and U.S. trade policies have resulted in a U.S. agricultural export system that ships more grain than the rest of the world combined. Even with suspension of shipments to the USSR, U.S. agricultural exports are still expected to reach a record value this year. And as foreign demand for grain and other farm products continues to grow, U.S. farmers should find themselves with a big share of expanding markets.

Ups And Downs Of Soviet Agriculture

Soviet efforts to increase livestock and poultry production, coupled with problems in growing corn and soybeans—two major sources of high protein feed—have boosted the Soviet's need for feed grain imports during the past few years.

During the 1970's, Soviet grain production fluctuated wildly. To compensate for the years of short crops, the USSR turned to imports, with the U.S. emerging as the major supplier.

For the first 5 years of the decade, total Soviet grain imports averaged around 10 million tons of grain per year. By the end of the decade, average annual imports were about 20 million tons per year, although year to year figures varied widely.

Not until 1972/73 did the variability in Soviet grain imports become an issue in world grain trade. In that crop year, Soviet purchases jumped to 22.8 million tons from the 8.3 million tons of a year earlier. Then just as quickly, they fell to only 11.3 million tons the next year.

In 1975/76, Soviet grain production reached the lowest point of the decade—only 140 million tons. This disaster forced record total grain imports of 26.1 million tons, but failed to keep large numbers of livestock from being liquidated.

The next crop year Soviet grain production rebounded to 224 million tons and total imports dropped to 11.0 million tons.

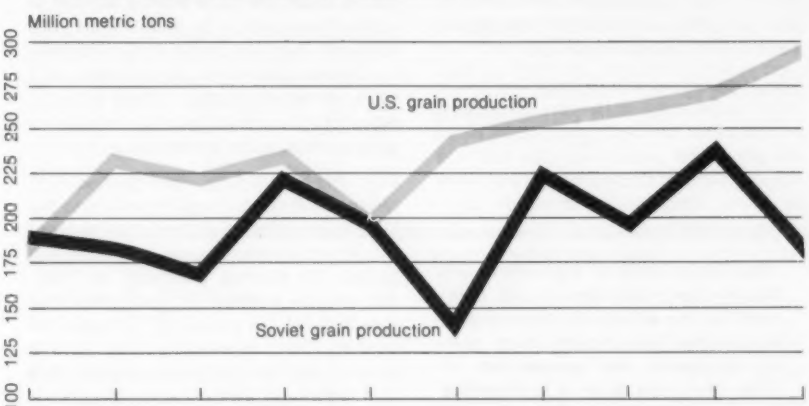
USSR grain imports, as a proportion of total world grain trade, rose from 9 percent in the early 1970's to nearly 13 percent in the later years.

During the 1970's, U.S. grain exports to all trading partners nearly doubled. The Soviet Union is responsible for less than one-fourth of this increase, but the U.S. accounted for two-thirds to three-fourths of the total volume of Soviet grain imports during the 1970's.

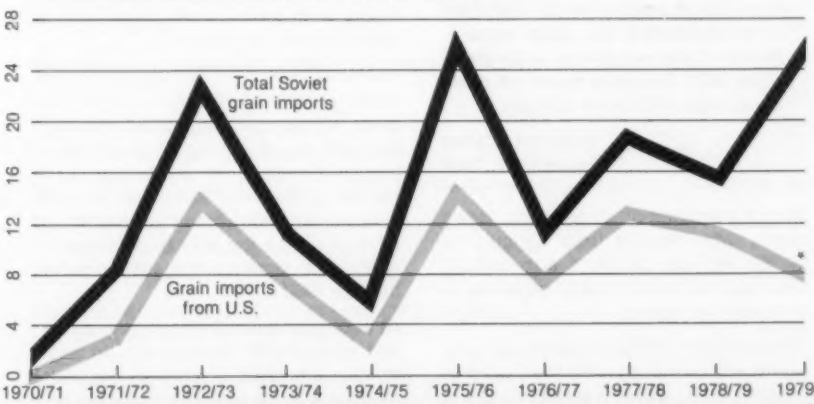
Unfavorable weather conditions cut grain production prospects in the USSR for 1979/80 to only 179 million tons, and grain imports were expected to reach an all-time high of 34 million tons.

In light of the U.S. suspension of grain sales to the USSR, the Soviets may fall far short of meeting this import need. If so, the Soviet livestock program could suffer a major setback.

Ups and Downs of Soviet Grain Production . . .



. . . Lead to Rising—But Erratic—Soviet Imports



*The USSR may purchase up to 8 million tons of U.S. grain during the fourth year of the grain agreement (October 1979-September 1980) under the terms of the current suspension of U.S. agricultural sales to the Soviets.

FEATURE

Fuel From Farms And Forests

Americans may soon see the nation's farms and forests as major sources of biomass energy materials. As these mostly untapped sources become increasingly significant in a world of shrinking nonrenewable petroleum supplies, farmers should reap the benefits of a new market for agricultural and forestry products.

Biomass is essentially agricultural and forest products and residues that can be converted into energy, either by direct combustion or through different conversion processes. An increasingly popular biomass application is the conversion of grain and residue feedstocks into alcohol for use in gasohol.

The Administration's Alcohol Fuels Program, announced in January, includes a provision for USDA to step up its alcohol programs and to ensure that the requirements of alcohol plants are given as much attention as those of other users of grain.

"The Department of Agriculture will include the production of farm commodities for alcohol feedstocks as a major objective of agricultural policy—alongside the production of food, feed, and fiber. It is expected that the grain reserve targets, commodity price supports, and related agricultural policies will be managed to accommodate the grain requirements of ethanol plants on an equal basis with the grain needs of other consumers and users of grain."

President Carter
January 11, 1980

The Administration's program deals mainly with alcohol from agricultural feedstocks, but USDA is also making fuel uses of wood a major objective in its forestry programs.

Federal farm commodity and forest programs will be managed so that, as far as possible, there will be a steady supply of agricultural commodities and residues for alcohol production and wood materials for direct combustion or conversion into gaseous or liquid fuels.

This doesn't mean that farm and forest products will be earmarked or subsidized specifically for fuel use. That would discourage other uses of these products and restrict development of other sources of fuel. It does mean that producers of alcohol, wood fuels, or other biomass fuels will have equal access at competitive prices to grain supplies, forestry materials, and farm and forest residues.

Ethanol Versus Methanol

Ethanol (ethyl alcohol) will be the primary form of alcohol produced in the near future. It can be made from a number of agricultural products and wastes, but corn will likely be the primary feedstock for the next few years. Large amounts of corn are available, and current technology and economics favor the use of corn over several other feedstocks.

Still, the amount of corn turned into alcohol will not cut significantly into the U.S. corn supply. For the nation to meet the Administration's goal of 500 million gallons of alcohol produced in 1981, 200 million bushels of corn would be required (at 2.6 gallons of ethanol per bushel). This represents only 2 to 3 percent of the total corn crop in 1979 (7.7 billion bushels). According to a recent Department of Energy report, only about 4 percent of alcohol produced from biomass will come from all grains in the year 2000.

Methanol, which is derived from coal, wood products, and agricultural residues, will be used more than ethanol in the long run, but it will require technological advances in production techniques, some modification of engines, and a costly plant-building program, so ethanol will be the only form of alcohol available in significant quantities before the late 1980's.

At about the same time, wood products and agricultural residues should begin to take the place of corn as the major feedstock in ethanol and methanol production, as production techniques are developed and methods are found to store and transport the large quantities of residues involved.

In response to increasing petroleum prices, greater public acceptance of gasohol, and stronger federal support, ethanol production has increased from virtually nothing 18 months ago to the current rate of almost 80 million gallons per year.

This ethanol is being blended at the usual ratio of 1 part alcohol to 9 parts gasoline to produce gasohol. In December 1979, enough ethanol was produced to run about 1.5 million automobiles on gasohol for the entire month. Gasohol also works in farm equipment and other vehicles.

As a supplement to gasoline, alcohol from agricultural sources will decrease U.S. dependence on petroleum imports, which account for 48 percent of current U.S. petroleum use. It will also increase the market for agricultural products and substitute a renewable for a nonrenewable source of energy.

With these benefits in mind, the Administration's goals are to boost fuel alcohol production to an annual rate of 320

Gasohol: Impact On Oil Imports

Size of gasohol program[1]	Potential savings in crude oil imports[2]	
	Barrels per year	Share of total
percent	millions	percent
100	238	8.2
90	214	7.5
80	190	6.6
70	167	5.8
60	143	5.0
50	119	4.2
40	95	3.3
30	71	2.5
20	48	1.7
10	24	0.8
5	12	0.4

[1]Use of gasohol (10-percent blend) in place of gasoline as a percent of total domestic consumption. [2]Based on January-October 1979 import data. Total gasoline consumed is assumed to be 100 billion gallons annually (actual gasoline consumption in 1978 was about 108 billion gallons).

million gallons by the end of 1980 (quadrupled from the current 80 million gallons) and to 500 million gallons during 1981. (The end-of-1980 target is particularly dependent on congressional action to extend the current tax credit on farm-produced ethanol.)

Obstacles And Incentives

The only thing holding up alcohol production now is lack of adequate plant capacity. At least 2 years are required for construction of enough plants to furnish alcohol for a national gasohol program. The beverage alcohol industry can produce more ethanol, but these plants are not as energy efficient as new ones.

Until now, virtually all of the ethanol for gasohol has been produced from existing plants with some add-on capacity. Almost two-thirds of it (50 of 80 million gallons) is produced from a single plant in Decatur, Ill. The remainder comes from several additional plants using corn, cheese whey, and sulfite liquor (a byproduct of wood-pulping operations) as feedstock materials.

The long-term economic prospects have been too uncertain or unfavorable for firms to build new plants that must be financed over 20-25 years. Within the past new months, however, alcohol production from agricultural feedstocks has become attractive. There are several reasons for this:

- The substantially increased price at the refinery of unleaded gasoline (which competes with gasohol for markets.)
- Current federal investment and entitlement tax credits.
- Relatively stable corn feedstock prices.
- The possible extension through 2000 of the existing exemption of gasohol from the 4-cents-per-gallon federal excise tax. (This exemption, the extension of which is dependent on final congressional approval, is equivalent to a 40-cents-per-gallon subsidy on alcohol because of the 9-to-1 gasoline-to-alcohol mixture.)

A Question Of Economics

The accompanying table indicates the basic economics of construction and operation of new distillation plants to produce ethanol from corn as of the end of 1979.

About half the states now offer their own gasohol tax incentives of up to 90 cents per gallon of ethanol. These help keep existing alcohol plants operating at full capacity and should also encourage construction of small-scale, on-farm plants, which can be built and become operational within a few months. Operators can finance these plants more quickly while the incentives are still in effect. (Commercial distilleries may take 18 months to 2 years.)

The proposed extension of the 40-cents-per-gallon federal tax credit for 190-proof (or higher) ethanol produced and used on the farm, and the 30-cents-per-gallon tax credit for 150- to 190-proof ethanol, should also prompt construction of on-farm units.

Economics of a 40-Million-Gallon Per Year Alcohol Distillery

(With Federal Subsidies)

	(Dec. 1979)
Feedstock costs ($2.50/Bu. corn)	$0.98
Direct costs (fuel, labor, etc.)	.26
Indirect costs (administrative, marketing, plant overhead)	.10
Capital recovery [includes 15% return on equity (ROE)][1]	.34
TOTAL	$1.68
Less distillers' dried grain byproduct credit ($116/ton)	.38
TOTAL	$1.30
Less federal gasoline tax credit	.40
Less other federal incentives (investment tax credit, entitlement credit)	.08
NET PRODUCTION COST PER GALLON OF ETHANOL	$ .82
Refinery price of unleaded gasoline	$ .85
(plus octane credit)	.10
TOTAL	$ .95
ESTIMATED PROFIT PER GALLON OF ETHANOL, IN ADDITION TO 15% ROE[1]	$ .13

[1] The capital recovery estimate assumes a 15 percent after-tax ROE, 70 percent equity financing, and 12 percent cost credit. The 13 cents estimated profit per gallon, when considered in calculating capital recovery, would yield about a 20-25 percent after-tax ROE. Additional state subsidies would increase the rate of return.

Gasohol should become even more competitive in the marketplace during 1980 as the decontrol of domestic crude oil and OPEC price increases lead to higher gasoline prices.

More capital will be available for investments in new plants because of loans and loan guarantees announced in September by the Departments of Agriculture and Energy, including $3 billion during the 1980's (depending on congressional enactment) and $1 to $2 billion in existing loans. Another $1 billion in the proposed Energy Security Corporation is earmarked for the production of synthetic fuel from biomass.

While private capital is expected to flow into ethanol plant construction, both with and without government loans and loan guarantees, more lending assistance will be required for the small and on-farm plants, since capital and credit will be more readily available to investors in commercial plants.

Energy From Forests

Used to their full potential, the nation's forests can also provide substitutes for liquid petroleum fuels, natural gas, and petroleum used in the chemicals and plastics industries as an input and a production heat source.

U.S. forests could produce enough wood to supply over 10 percent of the nation's annual energy needs—after fully meeting the needs of regular lumber and paper production.

Researchers are giving high priority to the study of techniques for converting cellulosic feedstocks—bark, limbs, stumps, and other wood wastes—to alcohol or petrochemical substitutes, because large amounts of these residues are available. However, technology in this area is not fully developed, and there probably won't be significant energy production from these sources before 1990. The existing techniques for cellulosic conversion deliver relatively low yields of liquid fuels at high production costs.

Energy produced from wood will also have a beneficial side effect. Sulfite liquor, a byproduct of pulp and paper manufacturing, has long been a waste problem for the paper industry. Producers have come up with an attractive solution by converting this waste to ethanol.

Federal Support

The Food and Agriculture Act of 1977 called for a loan guarantee program, administered by USDA, to help finance four pilot projects for the conversion of agricultural and forest commodities and residues into energy. These projects have been tentatively approved at a cost of $42.7 million.

Two will convert agricultural products and wastes into ethanol. Another will convert farm and forest wastes to combustible pellets, and the fourth will use forest wastes to produce a variety of energy products.

USDA's Science and Education Administration has a $5 million program this year for biomass research and development, with $3.2 million for the production of alcohol and biomass feedstocks and about $1.8 million for the examination of on-farm energy generation and use. The latter would include examination of direct solar energy applications, wind energy, methane generation, and other types of nonconventional energy sources.

The Forest Service research program is seeking more effective and efficient uses of forestry products, focusing on production, better management practices for increasing yield, and more effective use of residues for energy production.

In all, USDA and other government agencies are expected to provide $1 to $2 billion over the next 10 years, or $100 to $200 million annually, to help develop the alcohol fuels industry. Most of the funding from this program will be used in loans and loan guarantees through the Farmers Home Administration (FmHA). For 1980, up to $100 million has been allocated for loan guarantees and up to $10 million has been allocated for direct loans through the FmHA.

The Administration has asked Congress to provide another $3 billion over the next 10 years to further stimulate production of liquid motor fuel alternatives to gasoline and diesel fuels. If approved by Congress, this would be carried out through USDA and the Department of Energy.

The two departments are also discussing a program to fund construction of small-scale alcohol operations and methane digestors. (Methane digestors convert animal wastes to methane gas.) Department of Energy funding of $5 million would be combined with USDA loans to provide $25 to $30 million for the program, which will demonstrate the economic feasibility of alcohol and methane production on a commercial basis.

Recent Publications

Unless otherwise indicated in the listings below, publications in this section may be obtained by writing to ESCS Publications, Room 0054 South Building, USDA, Washington, D.C. 20250, or calling (202) 447-7255. Ask for publications by title and report number (in parentheses). Single copies are free of charge.

Crop Reports and Farmers (unnumbered reprint).

A brief digest about USDA's Crop Reporting Board and the role of crop and livestock reports in the decisions that farmers and others in agriculture make every day. It examines how crop and livestock estimates are made, who benefits from them, and how they are used by the farm sector. It also addresses the most commonly asked questions about accuracy, security, and confidentiality.

Structure Issues of American Agriculture (AER-438). J.B. Penn and others.

The articles in this publication examine the structure of American agriculture—how farming is organized, who controls it, and where it is heading. Should there be public policies and actions which directly shape the structure of agriculture? Or, should agriculture be allowed to evolve without explicit public guidance? The purpose of these articles is to provide information that will increase understanding and facilitate discussion on the structure of agriculture.

Status of the Family Farm: Second Annual Report to the Congress (AER-434).

This report examines the changing structure of the U.S. farm sector, analyzes major trends and underlying forces, and discusses why the changes are occurring and where they may lead. It looks at the causes and effects of declining farm numbers and increasing farm sizes, escalating capital requirements and barriers to entry, and the rising average age of the farm operator. It also discusses alternative marketing approaches and the impacts of government commodity programs.

Prospects for Productivity Growth in U.S. Agriculture (AER-435). Yao-chi Lu, Philip Cline, and Leroy Quance.

This technical report analyzes historical changes in U.S. agricultural productivity, discusses sources of productivity change, and uses a theoretical model to project future productivity growth for the U.S. and its 10 farm production regions under three research and extension scenarios. It also examines the potential impact of new technologies on future growth.

Crop Reporting Board Catalog, 1980 Releases.

The Crop Reporting Board estimates production, stocks, inventories, disposition, utilization, and prices of agricultural commodities, and such other items as labor, farm numbers, and fertilizer. This catalog outlines all of the estimates and the dates they are available. (Order from the Crop Reporting Board, Room 0005-South, USDA, Washington, D.C. 20250).

Balance Sheet of the Farming Sector, 1979 (AIB-430). Carson D. Evans.

This publication assembles and analyzes the major farm asset inventory and liability accounts, including physical and financial assets and real estate and nonreal estate debt. Farm assets were valued at $820 billion on January 1, 1979, and outstanding debt was $137 billion, leaving farm proprietors an equity of $683 billion. Each of these amounts stood about 15 percent above value on January 1, 1978. Assets and claims to those assets are detailed for recent years, by sales classes, and by states.

Farm Income Statistics (SB-627).

The statistical tables in this bulletin fall into three categories: (1) tables containing revised gross farm income estimates for 1976 and 1977, as well as the first detailed estimates for 1978; (2) historical tables on farm and personal income; and (3) tables showing distributions of farm numbers, farm income, and off-farm income of farm operator families by value of gross farm sales classes.

Producing Fresh Winter Vegetables in Florida and Mexico: Costs and Competition (ESCS-72). G. A. Zepp and R. L. Simmons.

This study assesses changes occurring in the competitive positions of Florida's and Mexico's fresh winter vegetable growers between 1974 and 1979. Specific objectives are: to estimate the costs to produce and market fresh tomatoes, cucumbers, peppers, and eggplant from west Mexico and Florida; to assess the effects of price inflation for inputs and the devaluation of the peso on the competitive positions of Florida and Mexico; and to assess overall changes in the competitive positions of the two areas in supplying winter fresh vegetables to the U.S. market.

1979 Handbook of Agricultural Charts (Agricultural Handbook No. 561).

Nearly 300 easy-to-understand charts present past trends and recent developments on everything from the cost of farm inputs to agricultural trade to land use. Tables, background, and explanations are also included. This graphic survey of agriculture contains sections on the farm, natural resources, population and rural development, the consumer, food and nutrition programs, foreign production and trade, and commodity trends.

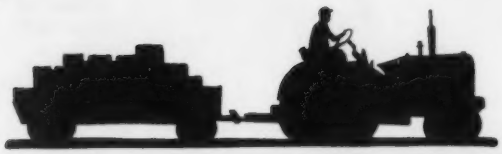
Food Prices in Perspective: A Summary Analysis (ESCS-53).

This report presents a summary assessment of food price behavior, component costs, consumer demand, and food availability. Retail food prices in the United States rose an average of over 9 percent annually from 1973 to 1979. The authors conclude that substantially reducing the upward movement of prices in the food sector is going to require the same long-term effort needed for doing so in the general economy.

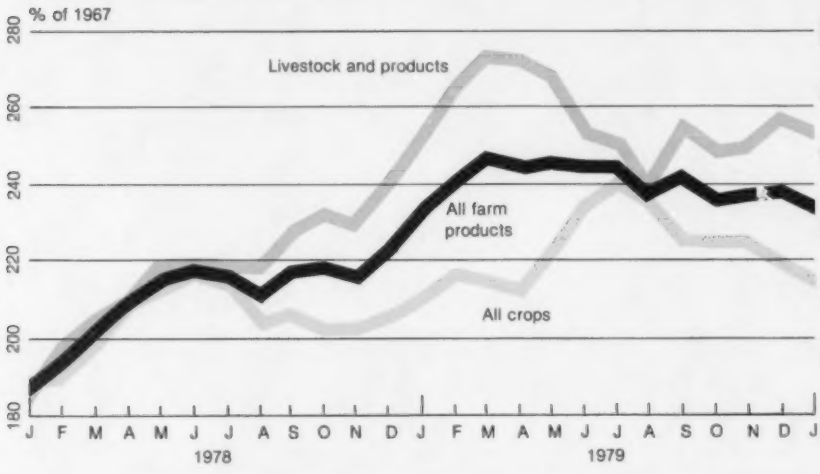
Farmline Trends

	1977	1978	1979					1980	
	Annual	Annual	I	II	III	IV	Annual	I	II
								forecast	
					1967=100				
Farm Prices And Production:									
Prices received by farmers	183	210	240	245	240	237	241	237	242
Livestock and products	175	216	263	265	248	251	257	256	260
Crops	192	203	213	222	233	222	222	217	222
Prices paid by farmers, all items	202	219	238	247	252	257	249	269	275
Production items[1]	208	226	249	259	262	267	259	266	271
Farm production	121	121	—	—	—	—	129	—	—
Livestock and products	106	106	—	—	—	—	107	—	—
Crops	130	131	—	—	—	—	144	—	—
Retail Prices:									
Food	192	211	228	234	237	240	235	246	251
At home	190	210	227	233	235	237	233	244	249
Away-from-home	200	218	233	241	246	251	243	256	261
Farm Food Market Basket:									
Retail cost	179	199	217	224	224	225	223	232	236
Farm value	178	208	237	236	227	227	232	232	233
Spread	180	194	205	217	223	224	217	232	238
Farm value/retail cost %	38	39	41	40	38	38	39	38	37
Per Capita Food Use:									
All products	104.6	104.5	—	—	—	—	104.2	—	—
Animal products[2]	103.0	102.2	99.9	99.7	101.1	105.0	101.4	—	—
Crop products	106.3	106.9	—	—	—	—	106.3	—	—
					billion dollars				
Farm Income: [3]									
Cash receipts	95.7	111.0	127.7	130.6	129.2	131.5	129.9	131.3	133.9
Livestock	47.4	59.0	70.0	68.0	64.9	66.8	67.5	67.5	67.6
Crops	48.2	52.1	57.7	62.6	64.3	64.7	62.4	63.8	66.2
Total gross farm income [4]	108.5	126.0	142.7	146.7	146.0	150.7	146.8	149.2	148.9
Production expenses	88.8	98.1	109.0	112.0	115.0	118.0	113.5	124.0	126.5
Net farm income	19.8	27.9	33.7	34.7	31.0	32.7	33.3	25.2	24.4
Trade: [5]									
Agricultural exports	24.0	27.3	8.2	7.7	7.9	8.2	32.0	10.8	8.2
Agricultural imports	13.4	13.9	3.9	4.1	4.4	3.8	16.2	4.2	4.4

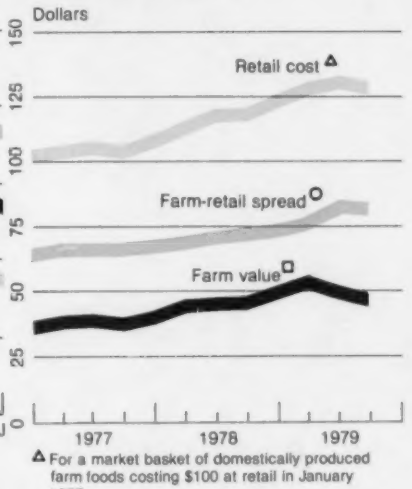
[1] Includes interest, wage rates, and taxes. [2] Quarterly data exclude fish products. [3] Quarterly data are seasonally adjusted at annual rates. [4] Includes net change in farm inventories. [5] Based on October-September fiscal years ending with the indicated year; i.e. 1979 means Oct. 1978-Sept. 1979 and I 1979 means Oct. 1978-Dec. 1978 (the first quarter of fiscal 1979).



Index of Prices Received by Farmers

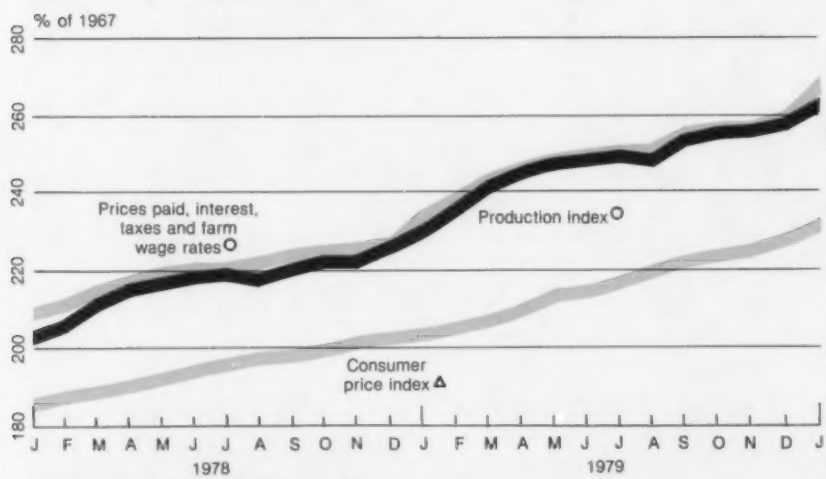


Farm-retail Price Spread



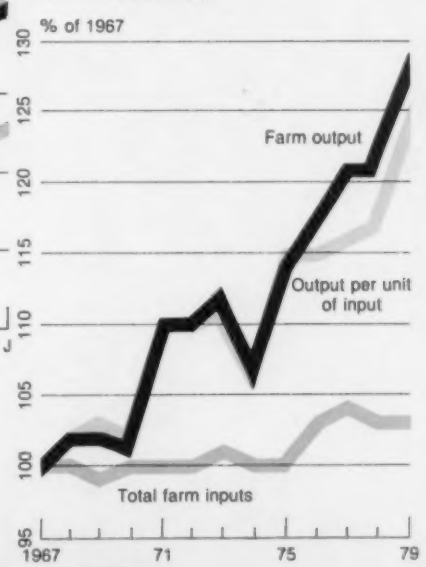
△ For a market basket of domestically produced farm foods costing $100 at retail in January 1977.
○ Charge for assembling, processing, transporting, and distributing these foods.
□ Payment to farmer for quantity of farm product equivalent to retail unit.

Index of Prices Paid by Farmers


% of 1967
280
260
240
220
200
180
Prices paid, interest, taxes and farm wage rates ○
Production index ○
Consumer price index △
J F M A M J J A S O N D J F M A M J J A S O N D J
1978
1979

○ Mid-month indexes. △ For previous month.

Farm Productivity



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